ABSTRACT OF THE DISCLOSURE

Disclosed is an inducible promoter system in conjunction with a site-specific recombination system which allows (i) specific activation of transgenes at specific times or (ii) excision and removal of transgenes (e.g., antibiotic resistance markers) from transgenic plants. These "suicide" gene cassettes, including the recombination system itself, can be evicted from the plant genome once their function has been exerted. The system is based on the ability to temporally and spatially induce the expression of CRE recombinase which then binds to directly repeated *lox* sites flanking the transgene in question leading to the precise excision of the gene cassette. Also disclosed is a method to activate an inverted, and therefore silent, transgene by placing two *lox* sites in opposite orientations flanking the transgene. This results in inversion of the intervening DNA fragment in the presence of CRE recombinase. This activation can be timed by placing the CRE recombinase under the control of an inducible promoter.